Government City College (A)
Nayapul, Hyderabad
Affiliated to Osmania University
Accredited with B^{++} Grade & CGPA 2.76

Department of Microbiology

COURSE OUTCOMES

Semester-I

CO 1	Understand nature of science and scientific enquiries, and have mastered a set of fundamental skills and effect of microorganisms on everyday life, health, food, sanitation, genetic engineering.
CO 2	Have a thorough concept of microscopy, methods of staining and measurement.
CO 3	Gain knowledge about how microorganisms are ubiquitous in nature with a concept on classification and general characteristics on microorganisms.
CO 4	Understand general characters of eukaryotes and viruses.

Semester-II

CO 1	Perform and follow sterilization techniques and display a habit of good lab practices.
CO 2	Develop and have thorough knowledge of developing pure cultures and methods of preservation techniques.
CO 3	Understand the fundamental biochemical principles, such as the structure/function of biomolecules.
CO 4	Gain knowledge on current biochemical and molecular technique and carry out experiments.

Semester-III

CO 1	Detail the macromolecules required for cell synthesis and growth as well as explain the various transport systems involved in the uptake of nutrients by bacteria.
CO 2	Devise and prepare media for isolation and growth of microorganisms, describe the different stages, methods and measurement of microbial growth and how environmental factors (pH, temperature, salt concentration) effect microbial growth, metabolism, and physiology.
CO 3	Explain the structure and function of enzymes, how enzymes are able to increase speed of an biochemical reaction, mechanisms of regulation of enzymatic action, importance of enzymes in regulation of metabolism.
CO 4	Explain the principles of the energy-yielding and -consuming reactions, the various catabolic pathways(including fermentations and photosynthesis), and the mechanisms of energy conservation in microbial metabolism.

Semester-IV

CO 1	Analyze the basic concepts of hereditary and the process of inheritance, understand the functions and molecular structures of DNA and RNA and how they serve as genetic information and concept of plasmids and transposons.

CO 2	Analyze the molecular mechanisms behind DNA damage and repair, classify mutations and discuss the various ways in which bacteria acquire new genetic information. (transduction, transformation, and conjugation)
CO 3	Conceptualize gene and their types and explain the processes and regulatory mechanisms governing the synthesis of nucleic acid and protein.
CO 4	Explain the basic principles of genetic engineering (enzymes and vectors) and the applications of genetic engineering in various fields.

Semester-V

CO 1	Demonstrate a comprehensive and practical understanding of basic immunological principles involved in research and clinical/applied science.
CO 2	Differentiate between humoral and cell mediated immunity and Learn about the different cells in immune system and their role in immunity.
CO 3	Understand the concept of antigens, antibodies and their structures in brief. Understand about the types of hypersensitivity and autoimmunity.
CO 4	Discuss current immunology news and issues.

Semester-VI

CO 1	Understand the importance and the role of normal flora, diagnosis and treatment.
CO 2	Description, classification, structure, and pathogenesis of bacteria that infect humans.
CO 3	To understand the importance of pathogenic bacteria in human disease with respect to infections of the respiratory tract, gastrointestinal tract, urinary tract, skin and soft tissue and explain the methods of microorganisms control, e.g. chemotherapy & vaccines.
CO 4	Solve problems in the context of this understanding. Recall the relationship of this infection to symptoms, relapse and the accompanying pathology.